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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/746,348	12/21/2000	John H. Santhoff	39129-1003	1684

44279 7590 09/29/2004

PULSE-LINK, INC.
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EXAMINER

ODLAND, DAVID E

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/746,348

Applicant(s)

SANTHOFF ET AL.

Examiner

David Odland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4,6-10,13-18,20-24,27-32,33-38,41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al. (USPN 5,887,054), hereafter referred to as Burke in view of Straub (USPN 5,930,685), hereafter referred to as Straub and further in view of Sand (USPN 6,512,746), hereafter referred to as Sand.

Referring to claims 1,15 and 29, Burke discloses a method for managing the channel suitability in a multiple access scheme, comprising obtaining information relating to noise associated with a channel (a test is performed to evaluate noise on multiple channels (see column 4 line 50 through column 5 line 6)), assigning a rating to the channel based on the estimated potential effect (the channels are ranked according to the measured noise on the channel (see column 4 line 50 through column 5 line 6)), and storing information relating to the channel and the associated rating in a database (the ranking of each channel is stored in a quality table (see column 4 line 50 through column 5 line 6)).

Burke does not disclose estimating a potential effect of the noise on a transmission quality of the channel based on the obtained information. However, Straub discloses a system wherein a Bit Error Rate (BER) of a channel is predicted based on measured noise of the channel (see column 5 lines 18-30). It would have been obvious to one skilled in the art at the time of the invention to

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implement this feature into Burke because doing so would make the system more robust and reliable.

Burke also does not disclose classifying the channel into a grade of service class based on the assigned rating. However, Sand discloses a system wherein based on a measure noise characteristic a particular connection, the connection is classified as having a voice grade of service (see figure 4 and columns 1 and 2)). It would have been obvious to one skilled in the art at the time of the invention to implement this feature into Burke because doing so would help ensure the quality of the voice calls, thereby making the system more reliable.

Note, Regarding claim 29, Burke does not disclose that the system is implemented in software. However, it would have been obvious to one skilled in the art at the time of the invention to implement the Burke system in this manner because the developmental costs of a software implementation are less than that of a hardware based implementation. Furthermore, software is easier to upgrade than hardware.

Referring to claims 2,16 and 30, although Burke discloses measuring the noise of each channel and correlating the noise with a particular channel, Burke does not specify sampling the noise for this correlation. However, Sand discloses a system wherein samples of speech are collected and the noise associated with the samples are analyzed (see figure 4 and column 2 lines 40-55)). It would have been obvious to one skilled in the art at the time of the invention to implement this feature into Burke because doing so would give an accurate and reliable measurement of the noise in the channel.

Referring to claims 3,4,17,18,31 and 32 Burke does not disclose that the step of estimating a potential effect of the noise on the transmission quality of the channel based on the

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obtained information further comprises determining a projected bit error rate for the channel based on the obtained information or using interference metrics to determine the bit error rate. However, Straub discloses a Bit Error Rate (BER) of a channel being predicted based on measured interference and noise of the channel (see column 5 lines 18-30). It would have been obvious to one skilled in the art at the time of the invention to implement this feature into Burke because knowing bit error rate of channels will aid in ensuring the channel has the proper and or desired quality for calls.

Referring to claims 6,20 and 34, Burke discloses that the grade of service class relates to the channel's suitability for carrying a particular data type (the GOS is used to make sure that voice data (i.e. voice calls) can be made over the Internet (see columns 1 and 2)).

Referring to claims 7,21 and 35, Burke discloses prioritizing the channel the grade of service class based on the rating of the channel (the channels are prioritized such that the end-points use the best available channels first (see column 4 line 50 through column 5 line 6)).

Referring to claims 8,22 and 36, Burke discloses that information relating to the priority of the channel is stored in the database (the channels are stored by rank in the quality table (see column 4 line 50 through column 5 line 6)).

Referring to claims 9,23 and 37, Burke discloses that the channel is obtained from the database (the end-point resort to the quality table to determine the next channel to use (see column 4 line 50 through column 5 line 6)).

Referring to claims 10,24 and 38, Burke does not disclose that the channel is periodically tested to determine whether the grade of service class of the channel needs to be changed. However, Sand discloses the Grade Of Service (GOS) measurements are performed over

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continuous periods of speech (see figure 7 and column 7 line 66 through column 8 line 11)). It would have been obvious to one skilled in the art at the time of the invention to implement this feature into Burke because periodically calculating the grade of service will make the system more robust and reliable rather than measuring only once.

Referring to claims 13,14,27,28,41 and 42, Burke does not disclose that the channels are CDMA or ultra wideband channels. However, It would have been obvious to one skilled in the art at the time of the invention to implement the channels of Burke in the manner because CDMA and ultra wideband communications are widely used established protocols.

3. Claims 5,19 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke in view of Straub and Sand and further in view of Caplan et al. (USPN 6,694,104), hereafter referred to as Caplan.

Referring to claims 5,19 and 33, Burke does not disclose that the interface metrics include a pulse position modulation error rate. However, Caplan discloses a system wherein the Bit Error Rate of a Pulse Position Modulated (PPM) Signal is measured (see figure 12 and column 12 line 61 through column 13 line 2)). It would have been obvious to one skilled in the art at the time of the invention to implement this feature into the Burke system because PPM is a widely used standardized modulation technique and know the BER of the signals will aid in ensuring the channel has the proper and or desired quality for calls, thereby making the system more reliable.

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4. Claims 11,25 and 39 rejected under 35 U.S.C. 103(a) as being unpatentable over Burke in view of Straub and Sand and further in view of Grube et al. (USPN 5,495,483), hereafter referred to as Grube.

Referring to claims 11,25 and 39, Burke discloses receiving a request for a channel from a requestor (endpoints request channels to be used (see column 5 lines 1-6)), searching the database to obtain a channel suitable for fulfilling the request (a next best channel is searched for in the quality table (see column 4 lines 60 through column 5 line 6)), allocating the channel to the requestor, notifying the suitable requestor to use the allocated channel (the channel to then used by the requesting endpoint (see column 4 lines 60 through column 5 line 6)). Burke does not disclose indicating in the database that the allocated channel is in use. However, Grube discloses a system comprising updating a carrier channel in-use database when the carrier channel is allocated (see claim 14). It would have been obvious to one skilled in the art at the time of the invention to implement this feature into Burke because doing so would allow for proper management of the channel and reduce channel use contention, thereby making the system more efficient.

5. Claims 12,26 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burke in view of Straub and Sand and further in view of Behrens et al. (USPN 5,754,353), hereafter referred to as Grube.

Referring to claims 12,26 and 40, Burke does not disclose receiving information relating to use of a channel when a user relinquishes use of the channel determining an actual bit error rate for the relinquished channel based on the received information, assigning a rating to the

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relinquished channel based on the actual bit error rate classifying the channel to a grade of service class based on the assigned rating, updating the information relating to the channel stored in the database to indicate grade of service class of the channel based on the actual bit error rate and that the channel is available for use. However, Behrens discloses examining expected errors with actual errors (see abstract). It would have been obvious to one skilled in the art at the time of the invention to implement this feature into Burke because keeping ongoing noise measurements of the system as lines are relinquished will make the system more reliable and robust.

Conclusion

6. The following prior art, which is made of record and not relied upon, is considered pertinent to applicant's disclosure:

- a. U.S. Patent Number 6,717,976 to Shen et al.
- b. U.S. Patent Number 6,128,494 to Rozmaryn.
- c. U.S. Patent Number 6,654,411 to Roberts et al

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Odland whose telephone number is (571) 272-3096. The examiner can normally be reached on Monday - Friday from 8am to 5pm.

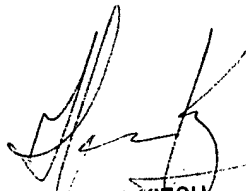
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou, can be reached at (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

deo

September 21, 2004



HASSAN KIZOU
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